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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/716,358	11/17/2003	Xiandong Wang	08935-295001	7033
26161 7590 01/05/2007 FISH & RICHARDSON PC P.O. BOX 1022 MINNEAPOLIS, MN 55440-1022			EXAMINER WILLS, MONIQUE M	
			ART UNIT 1745	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE 3 MONTHS			MAIL DATE 01/05/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

10/716,358

Applicant(s)

WANG ET AL.

Examiner

Monique M. Wills

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 107163 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 02 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-35 and 42-52 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-21, 24-26, 31 and 42-48 is/are allowed.
- 6) ☒ Claim(s) 22-23, 27-30 & 32-35, 49-52 is/are rejected.
- 7) ☐ Claim(s) 2 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 10/2/06.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_.

**DETAILED ACTION*****Request for Continued Examination***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on October 2, 2006 has been entered.

- The rejection of claims 1-15, 17—18, 20-30, 32-35 & 42-52 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-9, 30—39, 60—72 & 92-97 of U.S. Patent No. 10/913,922, is overcome. The Terminal Disclaimer filed August 28, 2006 was received.
- The rejection of claims 43, 46, 50 & 52 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 10/913,922 in view of Mori et al. U.S. Patent 6,794,082, is overcome.

An action on the RCE follows.

### ***Claim Objections***

Claim 2 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 1 requires an oxide containing lithium or potassium. However, claim 2 recites oxide materials that do not contain lithium or potassium in the compound. An appropriate correction is require.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 requires a cathode oxide containing an alkali metal of lithium or potassium. However, claim 2 requires that the cathode oxide includes other alkali metals such as Na, Rb and/or Cs.

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-5, 10-16, 19, 22, 24, 26,28-31 & 42-52 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1,2, 4-7, 9-10, 12-13, 15-16, 18-21 & 22-23 of U.S. Patent No. 10/913,922. Although the conflicting claims are not identical, they are not patentably distinct from each other because they contain common subject matter as follows:

**Claims 1, 2 & 22-23** of '050 embrace instant claims 1 & 42-44 by necessitating: a battery comprising a cathode of an oxide containing a metal and pentavalent bismuth; a lithium anode; a separator between the cathode and anode; and an electrolyte wherein an additional oxide material such as NiOOH and AgO are employed in the cathode.

**Claim 4** of '050 embraces instant claim 2, wherein the oxide is  $\text{KBiO}_3$ .

**Claim 18** embraces instant claim 3 by necessitating: an oxide with an electrically conductive portion.

**Claim 19** of '050 embrace instant claim 4 by necessitating: the electrically conductive portion is an electrically conductive surface coating comprising carbon or a metal oxide.

**Claims 20-21** of '050 embrace instant claim 5 by necessitating: the electrically conductive surface coating has a material selected from the group consisting of graphite, carbon black, acetylene black, cobalt oxide, cobalt oxyhydroxide, silver oxide, silver nickel oxide and indium oxide.

**Claims 1, 2, 5 & 22-23** of '050 embrace instant claims 10, 19 & 26, 45-48 by necessitating: a battery comprising a cathode of an oxide containing a metal and pentavalent bismuth; a lithium anode; a separator between the cathode and anode; and an electrolyte where the oxide is  $\text{SrBi}_2\text{O}_6$ ,  $\text{Sr}_2\text{Bi}_2\text{O}_7$  ect... ; and an electrolyte wherein an additional oxide material such as NiOOH and AgO are employed in the cathode.

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**Claim 6** of '050 embraces instant claim 11, wherein the alkaline earth material is magnesium, calcium strontium or barium.

**Claim 7** of '050 embraces instant claim 12, wherein the alkaline earth material is  $\text{SrBi}_2\text{O}_6$  ect....

**Claim 18** embraces instant claim 13 by necessitating: an oxide with an electrically conductive portion.

**Claim 19** of '050 embrace instant claim 14 by necessitating: the electrically conductive portion is an electrically conductive surface coating comprising carbon or a metal oxide.

**Claims 20-21** of '050 embrace instant claim 15 by necessitating: the electrically conductive surface coating has a material selected from the group consisting of graphite, carbon black, acetylene black, cobalt oxide, cobalt oxyhydroxide, silver oxide, silver nickel oxide and indium oxide.

**Claim 7** of '050 embraces instant claim 16, wherein the alkaline earth material is  $\text{MgBi}_2\text{O}_6$  ect....

**Claims 1 & 8, 9-10, 12-13 & 15-16** of '050 embrace instant claims 22 & 49-52 by necessitating: a battery comprising a cathode of an oxide containing a metal and pentavalent bismuth; the metal being a main group metal, a lanthanide or a transition metal; a lithium anode; a separator between the cathode and anode; and an electrolyte where the oxide

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contains a transition metal (claims 8-9),  $\text{ZnBi}_2\text{O}_6$ ,  $\text{AgBiO}_3$  (claim 10), a lanthanide (claims 12-13) or a main group metal (claims 15-16).

**Claim 10** of '050 embraces instant claims 22 & 31, wherein the oxide material is  $\text{ZnBi}_2\text{O}_6$  ect....

**Claim 13** of '050 embraces instant claim 24, wherein the lathanide material is Lanthanum, cerium, praseodymium, neodymium, samarium, europium, gadolinium, terbium, dysprosium, holmium, erbium, thulium and ytterbium.

**Claim 16** of '050 embraces instant claim 22, wherein the main group metal is Indium, tin, antimony or lead.

**Claim 18** embraces instant claim 28 by necessitating: an oxide with an electrically conductive portion.

**Claim 19** of '050 embrace instant claim 29 by necessitating: the electrically conductive portion is an electrically conductive surface coating comprising carbon or a metal oxide.

**Claims 20-21** of '050 embrace instant claim 30 by necessitating: the electrically conductive surface coating has a material selected from the group consisting of graphite, carbon black, acetylene black, cobalt oxide, cobalt oxyhydroxide, silver oxide, silver nickel oxide and indium oxide.



This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

***Allowable Subject Matter***

**Claims 1-9 & 42-44** would be allowable over the prior art of record, because the prior art is silent to a primary battery comprising a cathode with an oxide containing the metals of

**Claims 4-5** would be allowable over the prior art of record once the provisional double patenting rejection is overcome, because the prior art is silent to a cathode oxide, wherein an electrically conductive portion of carbon or metal oxide is coated on the cathode material.

**Claims 10-16 & 19** would be allowable over the prior art of record, because the prior art is silent to a primary battery comprising a cathode oxide, wherein the oxide comprises an alkaline earth metal and pentavalent bismuth. Claims 17-18 & 20-21 & 45-48 are allowed based on their dependency on claim 10.

**Claims 24-26 & 31** would be allowable over the prior art of record, because the prior art is silent to a primary battery comprising a cathode with

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an oxide containing the metals of claims 24-25 & 31 and pentavalent bismuth.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**Claims 22-23 & 27-30, 32-35 & 49-52** are rejected under 35 U.S.C. 102(b) as being anticipated by Passaniti et al. U.S. Patent 6,001,508.

With respect to **claim 22**, Passaniti et al. teach an electrochemical cell, comprising: a cathode comprising an oxide containing a transition metal and pentavalent bismuth such as  $\text{AgBiO}_3$  (col. 3, lines 45-55); an anode; and separator between the electrodes; and an alkaline electrolyte. See column 4, lines 25-35. The cathode material may contain electrochemically active material different from the oxide. See column 2, lines 30-40 and column 4, lines 55-65.

With respect to **claim 23**, the transition metal is silver. See column 2, lines 30-40 and column 4, lines 55-65.

With respect to **claim 27**, the cathode oxide is  $\text{AgBiO}_3$  (col. 3, lines 45-55).

With respect to **claims 28-30**, the oxide contains an electrically conductive surface coating of  $\text{Ag}_2\text{O}$ . See Figure 1.

With respect to **claim 32**, the anode is zinc (col. 4, lines 20-25).

With respect to **claim 33**, the electrolyte contains sodium or potassium hydroxide (col. 4, lines 25-35).

With respect to **claim 35**, the limitation with respect to the separator being capable of trapping soluble bismuth species, is an inherent function of the separator set forth in the prior art, because Passaniti teaches a polyvinyl alcohol separator and the battery could not function if the separator does not separate the active material of the cathode from the anode.

With respect to **claim 34**, the limitation with respect to the first material being capable of reducing the solubility of the oxide in the electrolyte, is considered an inherent function of the prior art set forth, because Passaniti teaches the same zinc oxide electrolyte additive set forth by the instant claims. Support for this assertion is provided in MPEP 2112.01, “ [where] [p]roducts of identical chemical composition can not have mutually exclusive properties.” A chemical composition and its properties are inseparable. Therefore, since Passaniti teaches the identical chemical structure, the properties applicant discloses and/or claims are

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necessarily present. See *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

With respect to **claims 49-52** the cathodic additive includes NiOOH and manganese dioxide. See Table 4.

Therefore, Passaniti anticipates the instant claims.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Morehouse et al. U.S. Patent 2,809,225 teach a primary cell (col. 1, lines 15-20), comprising: a cathode comprising an oxide containing an alkali metal and pentavalent bismuth such as **NaBiO<sub>3</sub>** (col. 2, line 45); a zinc anode; and separator between the electrodes; and an alkaline electrolyte. See Example II.

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Monique Wills whose telephone number is (571) 272-1309. The Examiner can normally be reached on Monday-Friday from 8:30am to 5:00 pm.

If attempts to reach Examiner by telephone are unsuccessful, the Examiner's supervisor, Patrick Ryan, may be reached at 571-272-1292. The

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fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MW

12/21/06



DAI-WEIYUAN  
PRIMARY EXAMINER